DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

LAKE TROPHIC DATA

MORPHOMETRIC:

Lake: SUNAPEE LAKE, LITTLE	Lake Area (ha): 191.01
Town: NEW LONDON	Maximum depth (m): 13.1
County: Merrimack	Mean depth (m): 4.4
River Basin: Connecticut	Volume (m ³): 8449500
Latitude: 43°26'03" N	Relative depth: 0.8
Longitude: 72°01'08" W	Shore configuration: 1.94
Elevation (ft): 1220	Areal water load (m/yr): 4.94
Shore length (m): 9500	Flushing rate (yr^{-1}) : 1.10
Watershed area (ha): 1605.8	P retention coeff.: 0.66
<pre>% watershed ponded: 1.9</pre>	Lake type: natural w/dam

BIOLOGICAL:	12 January 1995	21 July 1994
DOM. PHYTOPLANKTON (% TOTAL) #1	ASTERIONELLA 55%	CHRYSOSPHAERELLA 30%
#2	RHIZOSOLENIA 20%	TABELLARIA 20%
#3	UROGLENOPSIS 20%	ASTERIONELLA 10%
PHYTOPLANKTON ABUNDANCE (units/mL)		
CHLOROPHYLL-A (µg/L)		3.39
DOM. ZOOPLANKTON (% TOTAL) #1	NAUPLIUS LARVA 38%	NAUPLIUS LARVA 24%
#2	CYCLOPOID COPEPOD 16%	KERATELLA 18%
#3		
ROTIFERS/LITER	24	19
MICROCRUSTACEA/LITER	35	30
ZOOPLANKTON ABUNDANCE (#/L)	61	51
VASCULAR PLANT ABUNDANCE		Scat/Common
SECCHI DISK TRANSPARENCY (m)		4.8
BOTTOM DISSOLVED OXYGEN (mg/L)	10.7	0.9
BACTERIA (E. coli, #/100 ml) #1		
#2		
#3		

SUMMER THERMAL STRATIFICATION:

stratified

Depth of thermocline (m): 5.4 Hypolimnion volume (m³): 498500 Anoxic volume (m³): 13500

CHEMICAL:			SUNAPEE I	LAKE, LITT	LE
	12 Janua	ary 1995	21 3	July 1994	
DEPTH (m)	3.5	7.0	2.0	6.5	10.5
pH (units)	6.4	6.1	6.8	6.4	6.2
A.N.C. (Alkalinity)	4.4	4.6	3.8	3.6	4.2
NITRATE NITROGEN	< 0.10	< 0.10	< 0.05		0.07
TOTAL KJELDAHL NITROGEN	0.23	0.31	0.16	0.12	0.21
TOTAL PHOSPHORUS	0.006	0.008	0.008	0.015	0.009
CONDUCTIVITY (µmhos/cm)	66.9	68.6			
APPARENT COLOR (cpu)	21	21			
MAGNESIUM			0.60		
CALCIUM			3.4		
SODIUM			7.7		1
POTASSIUM			0.57		
CHLORIDE	13	13	13		12
SULFATE	6	7	6		6
TN : TP	38	39	20		31
CALCITE SATURATION INDEX			3.4		

All results in mg/L unless indicated otherwise

TROPHIC CLASSIFICATION: 1994

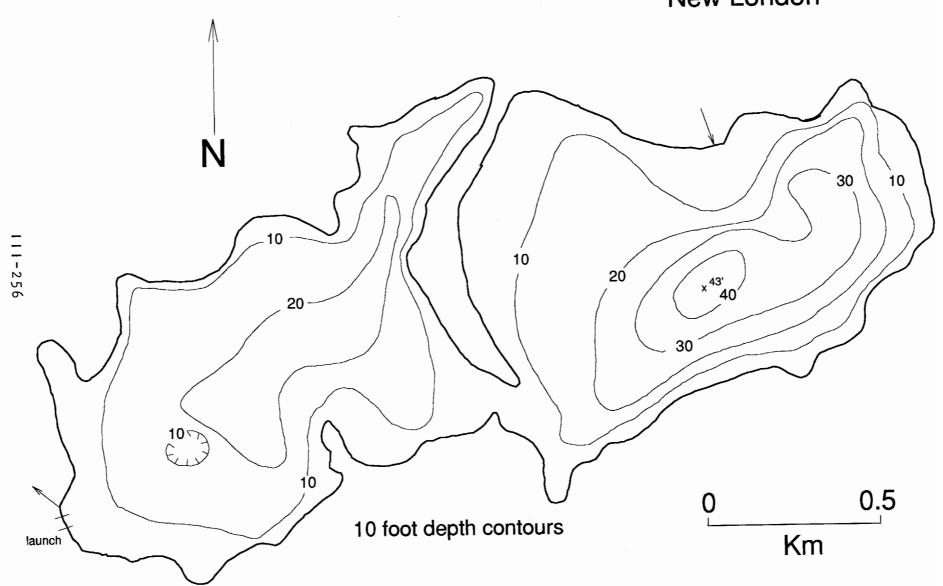
D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
3	2	2	0	7	Meso.

COMMENTS:

- 1. This lake was previously surveyed and classified in 1979. There was no change in classification and little change in water quality between the two years.
- 2. There was a fishy smell under the ice in the winter, probably due to healthy populations of <u>Asterionella</u> and <u>Uroglenopsis</u> in the phytoplankton.
- 3. Slightly elevated sodium and chloride levels suggest some salt runoff into the lake.

Little Sunapee Lake

New London



FIELD DATA SHEET

LAKE: SUNAPEE LAKE, LITTLE TOWN: NEW LONDON WEATHER: HAZY SUN WITH PASSING SHOWER

			THEOTHE DISCULA
DEPTH (M)	TEMP (°C)	*DISSOLVED OXYGEN	OXYGEN SATURATION
0.2	26.1	8.8	109 %
1.0	25.9	8.8	108 %
2.0	24.6	8.8	106 %
3.0	23.4	8.6	102 %
4.0	22.8	8.5	100 %
5.0	20.4	8.8	97 %
6.0	15.1	7.1	71 %
7.0	13.2	7.3	69 %
8.0	11.7	7.1	66 %
9.0	10.6	5.0	44 %
10.0	10.2	2.6	23 %
11.0	9.8	1.2	11 %
12.0	9.7	0.9	8 %

SECCHI DISK (m): 4.8 COMMENTS:

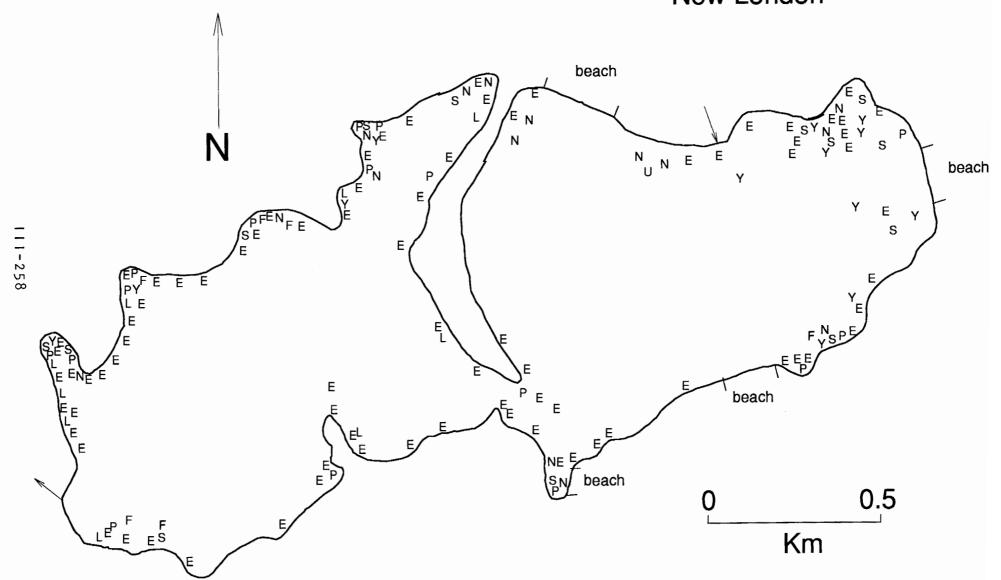
BOTTOM DEPTH (m): 13.0

TIME: 1515

*Dissolved oxygen values are in mg/L

Little Sunapee Lake

New London



AQUATIC PLANT SURVEY

LAK	E: SUNAPEE LAKE, LITTLE	TOWN: NEW LONDON	DATE: 07/21/94	
Key	PLANT	NAME	ABUNDANCE	
Key	GENERIC	COMMON	ABUNDANCE	
E	Eriocaulon septangulare	Pipewort	Scat/Common	
L	Lobelia dortmanna	Water lobelia	Scattered	
P	Pontederia cordata	Pickerelweed	Scattered	
ន	Sparganium	Bur reed	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
N	Nymphaea	White water lily	Sparse	
F	Nymphoides cordatum	Floating heart	Sparse	
ט	Utricularia	Bladderwort	Sparse	
		:		

GENERAL OBSERVATIONS:

- 1. Many rocky areas were present along the shore.
- 2. Four swimming beaches were present.
- 3. Plants appeared to be slightly more abundant than they were in the 1979 survey.

OVERALL ABUNDANCE: Scat/Common